



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ments, for the most part, of a sandstone plateau, still horizontal in its stratification, although the mighty workings of nature have carried away everything except here a triangle, there a square, here again a narrow stripe like a wall. Winding along among the hills, seeing now a few ostriches and now a herd of hartebeests in the distance, we emerged at length in the valley, through which runs the main road between Harrismith and Winburg; and, after an eight or nine hours' trek, outspanned once more at the Sand Spruit, which we found so dry as hardly to afford a drop of water for our own use, and none whatever for the cattle.

The following morning we started by sunrise, and outspanned at Eland River to breakfast. Starting once more, and passing a remarkable hill with a wall-like crown, which divides the Harrismith road and the old road to Natal, we were overtaken by a storm of hail and rain, which forced us to outspan for the night in a situation without fuel and without water. Next day, Tuesday, the 20th March, we once more reached Harrismith; and here I may terminate these very imperfect memoranda. With the exception of a compass, by means of which I took roughly the bearings of different points on my return between Renoster River and Harrismith, I had no instruments whatever for making observations. Even distances traversed, whether by waggon or on horseback, I could only compute by the time occupied; and this, for a length of time, without the use of a watch. All, therefore, that my memoranda, and the sketch-map of my route, profess to do, is to give such general impressions as would be made by the external aspect of the country on an ordinary traveller in circumstances so unfavourable to correct observation.

XXI.—*Account of Ghadamis.* By C. H. DICKSON, Esq., F.R.G.S.,
H.B.M. Consul at Sukum Kalé.

Read, June 27, 1859.

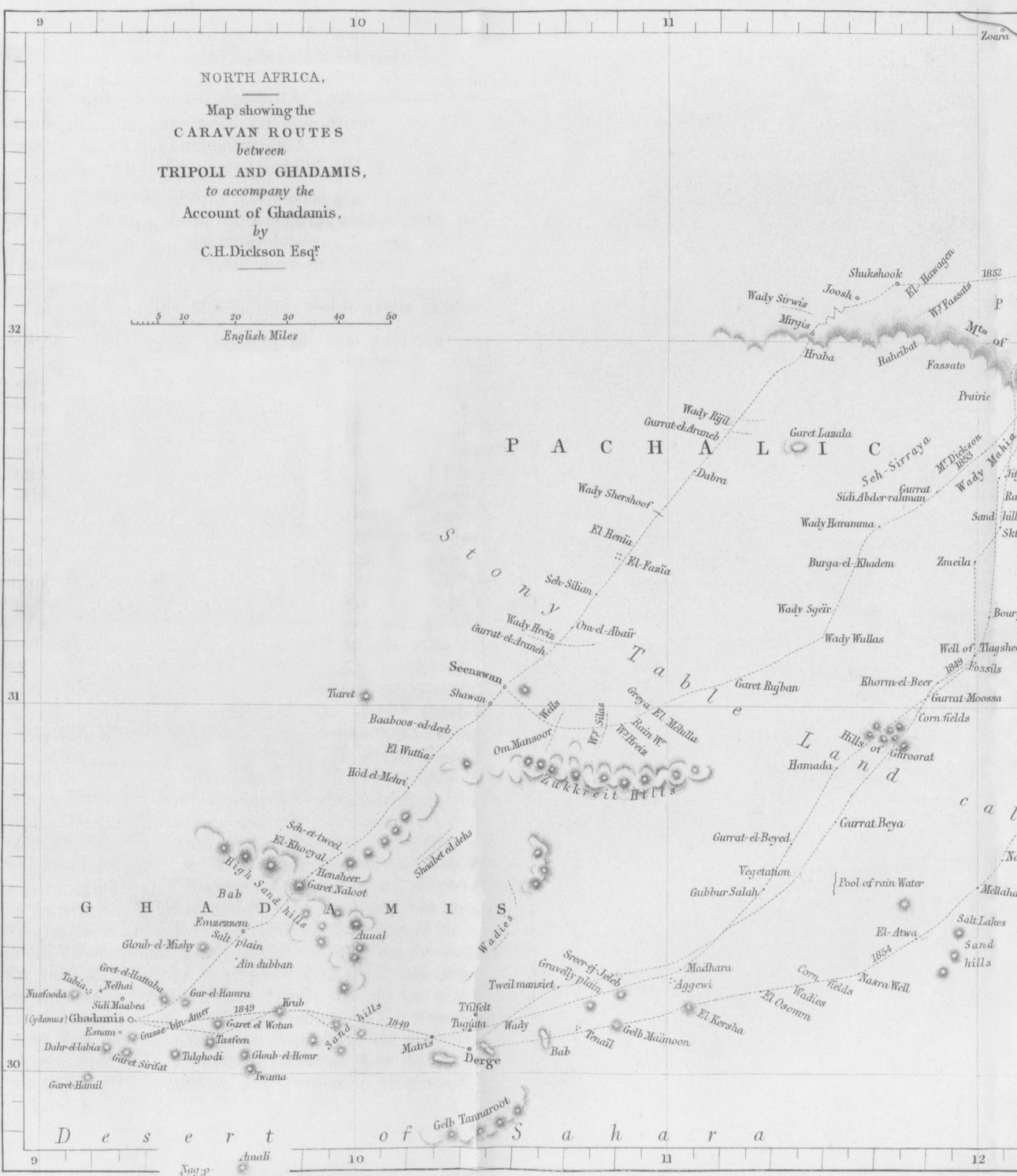
THE district of Ghadamis is situated on the northern boundary of the Desert of Sahara, and forms the south-western frontier of the pashalic of Tripoli. It comprises three oases, namely, Ghadamis Proper, Derge, and Seenawan. Derge, which is distant some 50 miles from Ghadamis, consists of the villages of Derge Proper, Tugulla, Matris, and Tfilfelt. Seenawan consists of the villages of Seenawan Proper and Shawan, distant about 80 miles from Ghadamis. The oases of Ghadamis, Derge, and Seenawan have an average circumference of 6, 10, and 4 miles respectively. Ghadamis and Seenawan are almost equidistant from Derge, the whole district forming an isosceles triangle, the area of which may be estimated at 1200 square miles. Beyond these cultivated spots

the surface is purely desert, the geological structure consisting principally of horizontal strata of sandstone and limestone, intersected by small dry valleys; also of ridges and sand-hills. There is no basalt, nor any plutonic formation. The black stones with which the Sahara is strewn are flints and sandstone blackened by the influence of the atmosphere, owing to the presence of a little iron.

Besides being known as the Cydamus of the ancient Romans, Ghadamis, according to the most authentic accounts in possession of the natives, existed in the seventh century, when the first mosque was erected. In this mosque are deposited the remains of Sidi Okba-el-Beddri, successor to the celebrated warrior of that name, and with whose invasion of Northern Africa this epoch corresponds. It is not, improbable, however, that Ghadamis may have existed in the time of the Carthaginians, and that it became a Libyo-Phœnician colony. In support of this hypothesis I may advert to the Berber origin of the natives and their language, the subjection of the oases to the Government of Tunis at a remote period, while the extensive land trade of the Phœnicians must have rendered the acquisition of Ghadamis by them indispensable. Ghadamis has, nevertheless, as well as more celebrated cities, the tales of its origin; yet, whatever this may be, there can be no doubt that its existence is owing to a large spring which serves to irrigate the whole oasis. According to popular tradition the discovery of this spring, and consequently the origin of Ghadamis, is ascribed to a mare. It is said that a party of Arabs while wandering about the Sahara once missed a bowl out of which they had been eating. One of the party having been despatched in quest of it, retraced his steps to the spot where they had dined the previous day, and on which Ghadamis now stands (then a mere parched waste). The Arab had no sooner arrived and found the missing bowl, than his thirsty charger, a mare, impelled by instinct, began scratching strenuously the ground with its hoofs, and behold, a limpid stream gushed out! The successful bowl-seeker, and still more fortunate discoverer of the precious element, on his return to his companions, being interrogated as to the spot where he discovered the bowl and water, replied, "*Ghadà àmis*," literally, "Dinner yesterday." Hence the name of the place. On the other hand, the natives presume that after the discovery of the spring by the mare, the foundations of a wall forming a basin were found a few feet below the surface; consequently the spring must have existed at a more remote period, and may have been choked up with sand. The water in question is hot, having a temperature of 89° Fahr. It is used for all domestic purposes, and allowed to cool for twenty-four hours in jars and goat skins prepared for the purpose, previous to being drunk. It has a flat taste, and produces a

NORTH AFRICA,
 Map showing the
 CARAVAN ROUTES
 between
 TRIPOLI AND GHADAMIS,
 to accompany the
 Account of Ghadamis,
 by
 C.H. Dickson Esq^r

5 10 20 30 40 50
 English Miles



laxative effect on strangers. Although perfectly transparent, the water must be very impure, and on being analysed deposited a considerable sediment, probably of carbonate of lime and organic remains. Treated with the following re-agents it gave,

With caustic ammonia, a considerable white precipitate :

With oxalic acid, a considerable white precipitate :

With nitrate of baryta, a considerable white precipitate :

With phosphate of soda and ammonia, also a considerable white precipitate :

With nitrate of silver, a less considerable white precipitate.

The water, therefore, contains probably the sulphates of lime, magnesia, and alum, and the muriate of soda.

The aggregate amount of the population of the whole district of Ghadamis is computed at 6500, of which number Ghadamis Proper contains 4000, Derge 2000, and Seenawan 500, all Moham-medans. The natives are divided into four classes:—the Harar, or freemen, the Homran, the Attara, and the Slaves. The Harar claim their descent from the original male landed proprietors of the country, who were of pure blood. The Homran trace their origin to Arab settlers (male), who, although of free blood, married at the time slaves being the property of natives; hence their designation, which means *coloured*. The Attara are the offspring of manumitted male slaves. One of the peculiarities of this last caste, according to the ancient customs of the country, is that it is incapacitated from giving testimony in a court of law. These classes bear the following proportions taken upon 20 :—Harar, 12 ; Attara, 5 ; Slaves, 2 ; Homranee, 1. The proportion of females to that of males is 3 to 1.

The district of Ghadamis is governed by a Moudir Bey placed under the jurisdiction of the Governor of the Jebel mountains. The Moudir is assisted in his administration by a Kadi, or judge, and his Mufti, a Sheikh, or Deputy-Governor, and a Municipal Council.

Ghadamis contains six mosques and seven schools, at which latter the children of the poor and wealthy are taught indiscriminately ; the former being exempt from payment. Education is at a very low ebb, the sum total of learning being the Koran, which the children are taught by rote, and a little Arabic writing. The natives in general are good linguists, being conversant with the Arabic, Haussa, and Tuaric languages, in addition to their own dialect, which is the Berber. Some also speak the Timbuctoo and Bornou languages. The women also boast of a superior education to that of their sex in general, being able to read and write a little, in addition to other domestic avocations. The natives reckon themselves Marabouts, or saints ; yet, in former times, they were

divided into two factions—the Beni-Wazeet and Beni-Ouleed—and continually retaliated upon each other their feuds. Even at this day each party occupies a separate quarter, and has little intercourse with the other. Such is the reverence for the Prophet and the excellence of his name at Ghadamis, that three-fourths of the natives are called *Mohammed*; and I know six brothers who are called after that name, being designated as the senior, junior, second, third, &c., Mohammed.

The population of Ghadamis Proper is essentially commercial; those of Derge and Seenawan are devoted to agriculture. Owing to the constant drought, the oasis of Ghadamis is entirely dependent upon the Jebel mountains, Derge, and Seenawan for its supplies. The gardens grow dates (of a superior quality), barley, wheat, and millet, besides melons, onions, &c., but the quantity produced is inadequate to the requirements of the population. The different kinds of seed are sown in the following rotation—wheat and barley in October, and are reaped in April; next follow millet and lucerne, and vegetables, which last till autumn. The soil seldom remains fallow, but is manured regularly in October. The manure is procured from the city sewers. The corn of the Sahara is superior to that raised on the coast, being more farinaceous. The average yield of a date-tree at Ghadamis is one camel-load (4 cwt.). The water with which the gardens are irrigated is supplied from the central hot-spring by means of three ducts. The quantity is measured out on the principle of an hour-glass—thus a small bucket, called a *kadoos*, is attached to a small aperture in the wall forming the basin of the spring, through which the water drops into the bucket; and this takes 42 minutes in being filled. A man watches the bucket day and night, and marks each time it is filled, the water meanwhile flowing through the ducts into the gardens. The whole quantity of this water is valued at one quarter of a million of mahboobs (40,000*l.*), and portions of it are bought, sold, and inherited like any other property. There are, in addition to the hot-spring, a few wells of fresh water, but, being brackish, it is not used.

The fall of rain is very precarious, occurring about once every four years. Such, however, are the fertilising properties of the soil in the neighbourhood of Ghadamis, that one copious shower in autumn is sufficient to ensure a crop of corn, which yields an average of twenty fold; while, on the other hand, a rich pasture is to be found. Truffles of an enormous size, some weighing 6 lbs., are also produced, particularly when the autumnal rain is accompanied with hail. The truffle is cut into shreds, dried in the sun, and thus preserves for a twelvemonth. The juice of the fresh truffle is also deemed by the natives a sovereign remedy for ophthalmia. Snow has sometimes, yet rarely, been seen in this

part of the Sahara. In January, 1821, a fall occurred, and proved fatal to a slave-caravan coming to Ghadamis from Ghat, the snow having lain a whole night on the ground, about half a foot deep.

The climate of Ghadamis is dry and healthy, but oppressively hot in summer. There is no prevailing disease, nor have plague and cholera ever been known : a remarkable circumstance, that the plague, which is known to have raged ten different times on the coast during the last two centuries, never extended to the interior beyond Sockna, Mizda, and the Jebel mountains.

By a meteorological table kept during four successive years, beginning from 1850, the thermometer has an annual range of about 74° , falling in January to 35° , and rising in July to 109° (Fahrenheit). The prevailing winds are the easterly and south-westerly ; and during the equinoxes, especially the autumnal, the latter wind blows with uncommon violence, filling the atmosphere with almost impalpable particles of sand.

The revenue of Ghadamis is estimated at 10,000 mahboobs (1700*l.*), and is derived from the following sources :—

1°. The annual tribute, amounting to 6150 mahboobs, levied partly upon real property and partly upon the personal property of every merchant, according to a conjectural valuation.

2°. The custom-dues, consisting of 9 per cent. import, and 3 per cent. export duty.

3°. A toll of 10 paras ($\frac{1}{2}d.$) on every camel-load of merchandise arising at Ghadamis.

4°. A tax of 5 per cent. upon the proceeds of every camel sold in the place.

The two last taxes are appropriated by the local Governor.

There are a few native manufactures, but all of a very inferior kind. These are woollen blankets, bernousses, shoes, &c.

The commerce of Ghadamis is carried on principally with Ghat, Kano, Timbuctoo, Tuat, and other parts of the interior of Africa, and with Tripoli. The exports from the interior consist of ivory, bees-wax, bullock-hides, goat-skins dyed red and yellow, ostrich-feathers, gold in lumps and dust, goroo-beans, gum-bekhoor used as incense, cotton shirts, &c. On the other hand, caravans convey from Tripoli to the interior cotton cloths and long cloths, Tangibs, all of British manufacture ; red-dyed raw silk, beads, from Venice ; woollen cloths, red caps, from Tunis ; paper, sugar, zinc, copper, sword-blades, mirrors, and small needles, from Germany ; gum benzoin, cloves, otto of roses, &c.

The burden of a camel is usually $3\frac{1}{2}$ cantars (4 cwt.). The current medium of exchange of Ghadamis is the Tunisian piastre, equal to 6*d.* sterling.

Gold is sold by the mithkal, equal to 69 grains (troy weight).

About 12,000 mithkals are annually imported to Ghadamis, valued at 6000*l*.

The following is the average rate of carriage per load in Tunisian piastres, and the average duration of the march of caravans, exclusive of stoppages, from Ghadamis to

	Piastres.	Days.
The Jebel Mountains	14	7
Tripoli	22	12
Ghat	30	20
Kano	250	110
Tuat	63	22
Timbuctoo	300	60
Souf	28	18

The caravans from Souf carry dates and woollen blankets, both of a superior quality.

In connexion with the commerce of Ghadamis, I must not omit mentioning the slave-trade, which was there actively carried on in former years. During my residence at Ghadamis the average number imported during the year was 500, principally females. The average price of a male was 60 mahboobs (10*l*.); that of a female 80 mahboobs (14*l*.) Of the number exported to the Levant two-thirds generally perished from pulmonary affections, caused no doubt by the hardships of desert travelling, as well as by the change of climate.

I am happy to state, in conclusion, that a decree from his Imperial Majesty Sultan Abd-ul-Mejid abolishes for ever this nefarious traffic. The new law was promulgated in the pashalic of Tripoli in 1856, and although it met with considerable opposition from the natives at first, it is now, I believe, faithfully observed.

XXII.—*Notes to accompany the Map of St. Helena.*—By Major
EDMUND PALMER, R.A., F.R.G.S.

Read, June 27, 1859.

THE map of St. Helena, now before the Fellows of the Royal Geographical Society, was executed during a residence of nearly six years on that island. It is shortly to be published on the reduced scale of $\frac{1}{27,000}$ by the Topographical Department of the War Office; and the author trusts that it may be instrumental in throwing some light upon the geology of one of the most interesting spots in the Atlantic.

The island of St. Helena, so well known to many a homeward-bound voyager, is situated in lat. 15° 56' s., long. 5° 45' w., at a distance of 1000 miles from the African coast, and 1700 from the coast of South America: it is of an oblong form, lying from